# Unit 4 Special Lines in Triangles

# Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_Block\_\_\_**

# Look up the definitions the terms in the table using your book and/or the

# internet. You can go to [www.mathwords.com](http://www.mathwords.com) for examples.

# Draw a picture to illustrate the meaning.

Look at [www.math.washington.edu/~king/java/gsp/trilines.html](http://www.math.washington.edu/~king/java/gsp/trilines.html) to see them all!

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| --- | --- | --- |
| **Segments of a Triangle** | **Definition** | **Illustration** |
| Median |  |  |
| **Altitude** |  |  |
| **Angle bisector** |  |  |
| **Perpendicular bisector** |  |  |

# Now that you see the meaning of each, use a ruler and a protractor to help you complete the exercises below. For each exercise, you will draw a scalene triangle with side lengths of 4 cm, 6 cm, and 8 cm. The angles can be any measure less than 90º.

1. Draw all three medians of your acute triangle. What observations can you make? Verify that medians do indeed bisect the opposite side. Measure all segment lengths. Compare ratios of lengths.
2. Draw the three altitudes of your triangle. What observations can you make? Verify that altitudes are indeed perpendicular to opposite sides by measuring the angles formed.
3. Draw the three angle bisectors of your triangle. What observations can you make? Verify that angle bisectors are indeed equidistant from both sides of the angle. Is the intersection of the angle bisectors equidistant from all sides of the triangle?
4. Draw the three perpendicular bisectors of the sides of your triangle. What observations can you make? Verify that perpendicular bisectors are indeed perpendicular to and bisect the sides of triangle. Is the intersection of the perpendicular bisectors the same distance from each of the vertices?